

1 Claims:

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3 1. A window for gating light for the purpose of controlling temperature within a
4 building, comprising a light transmissive substrate, a plurality of at least partially
5 reflective rollout members disposed on said substrate, and an electrically conductive
6 at least partially light transmissive conductive member disposed in facing
7 relationship with said reflective rollout members and said substrate, a source of
8 electrical potential for causing said rollout members to rollout, conductors for
9 coupling said source of electrical potential to said rollout members and two said at
10 least partially light transmissive conductive member, said at least partially light
11 transmissive conductive member being electrically insulated from said rollout's.

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13 2. A window as in claim 1, wherein said at least partially light transmissive
14 conductive member is disposed between said rollout and said substrate.

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16 3. A window as in claim 2, wherein said rollouts may be individually rolled out, or
17 rolled out in groups comprising less than all of the rollouts on said window.

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19 4. A building comprising a plurality of windows as recited in claim 3.

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21 5. A building comprising a plurality of windows as recited in claim 1.

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23 6. A building having a plurality of sides, each of said sides having a plurality of
24 windows as recited in claim 1 disposed each side, and for the comprising a control
25 system, said control system operative to vary the passage of light through windows
26 on one side of said building to be different from the passage of light through
27 windows on other sides of said building.

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- 1 7. A building as in claim 5, through the comprising a control system, said control
2 system comprising:
3 a plurality of environmental conditions sensors;
4 a central processing unit;
5 a first computer storage medium portion with a weather protection algorithm
6 recorded on said computer storage medium;
7 a second computer storage medium portion with user desired internal building
8 environmental conditions recorded thereon;
9 a third computer storage medium portion with weather prediction information
10 stored thereon;
11 a fourth computer storage medium portion with a system model of the building and
12 its heating and cooling characteristic stored thereon;
13 switches coupled to said central processing unit for controlling heating and/or
14 cooling and/or humidifier / dehumidifier systems; and
15 a plurality of drivers for driving rollouts on said windows.
16
17 8. A control system, said control system comprising:
18 a plurality of environmental conditions sensors;
19 a central processing unit;
20 a first computer storage medium portion with a weather protection algorithm
21 recorded on said computer storage medium;
22 a second computer storage medium portion with user desired internal building
23 environmental conditions recorded thereon;
24 a third computer storage medium portion with weather prediction information
25 stored thereon;
26 a fourth computer storage medium portion with a system model of the building and
27 its heating and cooling characteristic stored thereon;
28 switches coupled to said central processing unit for controlling heating and/or

- 1 cooling and/or humidifier / dehumidifier systems; and
- 2 a plurality of drivers for driving rollouts on said windows.

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4 9. A control system as in claim 8 wherein said sensors comprise an outside
5 temperature sensor and an inside temperature sensor.

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7 10. A control system as in claim 9, wherein said sensors further comprise an outside
8 windspeed sensor.

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10 11. A control system as in claim 10, wherein said sensors further comprise outside
11 humidity sensor, and inside humidity sensor, a shade light sensor, a sunlight sensor,
12 and a pressure sensor.

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14 12. A method for controlling and environmental system in the building, comprising
15 a plurality of

¹⁶ Building ambient conditions within a building vs. outside a building.

17. predicting future outside environmental conditions:

18 determining whether current conditions within a building are helpful to

19 accommodating future changes in the outside environment of the building; in the
20 event that such conditions are deemed helpful processing system capacities and
21 deciding upon a system actually should time and actuating appropriate mechanical
22 systems in response to such determination;

23 implementing a timeout interval before actuation of the system or actuating the

24 system in response to a period change within certain user set input conditions,
25 in the event that conditions are found helpful, determining whether the deviation
26 caused by using said conditions is helpful and in the event that it is not helpful
27 advancing said timeout interval;

28 in the event that conditions are not found helpful calculating utilization potential,

- 1 deciding upon system actually should time and actuating mechanical systems after
- 2 which the system is advanced to said timeout interval.

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